



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
---------------	-------------	-----------------------	---------------------

EXAMINER

ART UNIT	PAPER NUMBER
----------	--------------

DATE MAILED:

03/0

NOTICE OF ALLOWABILITY

PART I

- ☒ This communication is responsive to application filed/entered 09/27/94
- ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
- ☒ The allowed claims are 1-15
- ☐ The drawings filed on _____ are acceptable.
- ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received. ☐ not been received. ☐ been filed in parent application Serial No. _____, filed on _____
- ☒ Note the attached Examiner's Amendment.
- ☒ Note the attached Examiner Interview Summary Record, PTOL-413.
- ☒ Note the attached Examiner's Statement of Reasons for Allowance.
- ☒ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
- ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- ☐ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - ☐ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. _____. CORRECTION IS REQUIRED.
 - ☐ The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
 - ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - ☐ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- ☒ Examiner's Amendment
- ☒ Examiner Interview Summary Record, PTOL-413
- ☒ Reasons for Allowance
- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Citation, PTO-1449

- ☐ Notice of Informal Application, PTO-152
- ☐ Notice re Patent Drawings, PTO-948
- ☐ Listing of Bonded Draftsmen
- ☐ Other

Serial Number: 08/312,772

-2-

Art Unit: 2605

Part III EXAMINER'S AMENDMENT

Part III DETAILED ACTION

1. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Attorney Robert J. Black on February 16, 1995.

2. The application has been amended as follows:
On Page 1, line 6 of the specification; after the date "June 25, 1993" has been inserted the following text for completeness of continuing data section:

--- and now U.S. Patent Number 5,357,782

issued October 25, 1994 ---

On Page 8, claim 1, line 9; before the word "refrigeration" has been inserted the following phrase:

--- refrigerant for use in ---

On Page 8, claim 1, line 13; after the word "lamp" has been inserted the following text:

--- that produces light ---

On Page 8, claim 1, line 17; after the word "detectable" has been inserted the following phrase:

--- by visual observation ---

14

Serial Number: 08/312,772

-3-

Art Unit: 2605

On Page 8, claim 1, line 19; the word "dye" has been replaced with the following text:

--- dye, refrigerant ---

On Page 8, claim 1, line 19; after the word "mixture" has been inserted the following phrase:

--- seeping thru and ---

On Page 8, claim 1, line 20; the words "at said leak site, " have been altered into the following:

--- at location of said leak site, then ---

On Page 8, claim 1, line 21; the word "oxidation" has been replaced with the following phrase:

--- undergoing chemical oxidation changes ---

On Page 8, claim 1, line 21; the words "provide an" has been replaced with the following text:

--- provide capability for stable fluorescent ---

On Page 12, claim 15, line 3, after the word "solubilized" has been inserted the following phrase:

--- in the mixture preparation step ---

3. The following is an Examiner's Statement of Reasons for Allowance: The prior art fails to disclose a method of detecting leaks in a refrigeration system which uses a prepared mixture of fluorescent dye selected from the general class of naphthalimide dye structures mixed with refrigeration system refrigerant and lubricant in an operating refrigeration system for a pre-determined period of time, before examining the system by means

15

Serial Number: 08/312,772

-4-

Art Unit: 2605

of a lamp with light wavelength output from 300 and 480 nanometers so as to determine the presence of a leak site by the occurrence of colored fluorescence detectable by visual observation of possible leak sites under such lamp light when the dye, refrigerant and lubricant mixture seeps thru, appears and then remains at such leak site without undergoing chemical oxidation changes. Also, further novelty is found for the above method of detecting leaks that includes the step of solubilizing a dye mixture during its preparation by the addition of a solvent compatible with the refrigeration system lubricant and dye.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Allowable Subject Matter

4. Claims 1-15 are allowable over the prior art of record.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to show state of the art methods/ systems

Serial Number: 08/312,772

-5-

Art Unit: 2605

for detecting leaks in refrigeration or HVAC systems which share one or more features in common with the instant invention.

Packo, J. (1971) U.S. Patent Number 3572085.

Quaife, L. et al. (1992) U.S. Patent Number 5167867.

Bode, H. (1994) U.S. Patent Number 5279967.

Henry, R. (1994) U.S. Patent Number 5357782.

Malcosky, N. et al. (1987) U.S. Patent Number 4690689.

Parekh, M. (1988) U.S. Patent Number 4758366.

Larsen, N. (1966) U.S. Patent Number 3234045.

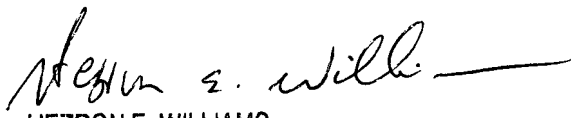
Parekh, M. (1992) U.S. Patent Number 5149453.

Gaugler, R. (1937) U.S. Patent Number 2096099.

Bartlett, P. (1973) U.S. Patent Number 3770640.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. david Wiggins whose telephone number is (703) 305-4884.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4900.


HEZRON E. WILLIAMS
SUPERVISORY PATENT EXAMINER
GROUP 100

JDW
WIGGINS/jdw
February 16, 1995



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: Box ISSUE FEE
COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

E6M1/0223

ROBERT J. BLACK
CARPENTER AND BLACK
1400 RENAISSANCE DRIVE
SUITE 205
PARK RIDGE, IL 60068

NOTICE OF ALLOWANCE
AND ISSUE FEE DUE

- ☐ Not attached communication from the Examiner
☐ This notice is issued in view of applicant's communication filed

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/312,772	09/27/94	015	WIGGINS, J	2605 02/23/95
First Named Applicant	HENRY, RICHARD G.			

TITLE OF INVENTION LEAK DETECTION IN HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS
USING AN ENVIRONMENTALLY SAFE MATERIAL

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPL. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
3 9471CIP	073-040.700	J12	UTILITY	YES	\$605.00	05/23/95

**THE APPLICATION IDENTIFIES ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS
APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

HOW TO RESPOND TO THIS NOTICE:

- I. Review the SMALL ENTITY Status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
B. If the Status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
B. File verified statement of Small Entity Status before, or with, pay of 1/2 the FEE DUE shown above.

- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.

- III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.